REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-10 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Claims at Issue

Applicants note that the original application included claims 1-10. The Examiner has only referenced claims 1-9 in the Action, both in the Office Action Summary and in the body of the Office Action. Applicants believe that this was merely a clerical error. However, the Examiner is requested to confirm that the official file contains 10 claims.

Claims Objections

The Examiner objected to claim 6 due to an informality on line 19. By way of the present amendment, Applicants have amended claim 6 to overcome this objection.

Rejection under 35 U.S.C. 102

Claims 1-9 stand rejected under 35 U.S.C. 102 as being anticipated by Webster et al. (U.S. Patent No. 6,748,200). This rejection is respectfully traversed.

The Examiner states that the reference shows an automatic gain control method and apparatus for a wireless communication network which uses a signal saturation property as a standard for entering an acquisition mode, including computing the average power of a received signal and monitoring the power range variation of the received signal, entering a gain acquisition mode when the monitored signal power changes from below a saturation threshold to above a saturation threshold, returning the current gain back to a default gain, re-computing the signal average power and if the monitor power does not fall within the tracking range, tuning the gain accordingly until the signal average power falls within the tracking range and entering a gain tracking mode. The Examiner refers to columns 13 and 14 of the reference.

Applicants submit that claims 1-10 are not anticipated by the Webster et al. reference. Concerning the apparatus claims 1-5, it is noted that the Examiner has not even attempted to point out where the various elements are found in the reference. Webster et al. shows an ADC saturation detect unit 137 and an AGC/DC control logic unit 141. However, Applicants submit that the reference does not show the average power computing unit, power range monitoring unit, logic unit and tracking unit, acquisition unit, gain returning unit, gain increasing unit and gain decreasing unit as recited in claim 1. Applicants submit that claims 1-5 are allowable since the reference does not show these units and since the Examiner has not met his burden of showing where such units are found in the reference. Accordingly, these claims are considered to be allowable.

Concerning the method claims, the Examiner has described a number of steps which he feels anticipates claim 6. Applicants submit that Webster et al. discloses an automatic gain control system and method for a ZIF architecture. Webster et al. in column 13. lines 3-38 discloses that, after initialization is complete, the operation transitions to a noise acquisition (ACQ) state 403 in which the ZIF receiver 100 attempts to track or otherwise view the noise floor of the wireless medium. The baseband processor 103 modifies the gain in the ZIF receiver front end 101, such as by setting the gain of the LNA 117 to HI and increasing the gain of the baseband amplifier 125 to the appropriate gain setting to view the noise floor by the AGC 131. When the noise floor level is acquired or otherwise when the ZIF receiver front end 101 is at its maximum gain level, an ADC/DC lock condition occurs and the operation transitions to a noise track state 405. In state 405, the AGC loop 107 is operated to track and maintain the DC level in the signal path of the ZIF receiver front end 101, by measuring the DC offset and subtracting the measured offset at the combiner 121. The operation remains in state 405 until an AGC/DC unlock condition occurs, upon which the operation transitions to a signal acquisition state 407. Several parameters are continuously monitored to determine transmitted signal presence, including the overload condition, a saturation condition of the ADC 131, or a signal trigger (ST) condition denoting an increase of power from the noise floor level of at least a signal trigger threshold amount.

Webster et al. in column 13, lines 42-45 also discloses that, the signal threshold amount is arbitrarily determined to identify signal presence, such as a 4-6 dB rise in power above the noise floor power tracked in state 405, and is referred to herein as an ST condition. But, Webster et al. does not disclose "computing the average power of a received signal to monitor the power range variation of the received signal, and entering the acquisition mode according to the power range variation of the received signal."

Webster et al. in column 13, lines 47-53 discloses that, in state (signal acquisition state) 407, the AGC control function modifies the gain of the receive chain signal path, if necessary, in an attempt to acquire the detected signal. Acquisition is achieved when the power level of the signal path is sufficient to enable the operative baseband processing logic (e.g., CCK processor 109 or OFDM processor 111) to demodulate and decode the received signal and retrieve accurate information and/or data contained therein. In other words, Webster et al. in column 13, lines 47-53 recites when signal acquisitions is achieved, but does not disclose "entering the acquisition mode when the monitored signal power changes from below a saturation threshold to above the saturation threshold".

Webster et al. in column 13, lines 53-55 discloses that, (in the signal acquisition state,) if the signal power level is sufficiently high, the AGC loop 105 operates to reduce the gain level to target back-off power level. In other words, in Webster et al., the gain level is just reduced when the signal power level is sufficiently high. Nevertheless, in the application, when entering the acquisition mode, the current gain is returned back to a default gain without determining the signal power level.

Webster et al. in column 13, lines 6-67 discloses that, if the signal power level is relatively weak such that the target back-off power level is not achieved when the total gain of the signal path is at a maximum gain level, then the AGC loop 105 is configured to maintain the maximum gain level, and the AGC/DC control logic 141 asserts the GDADJ signal to the digital gain amplifier 135 to make up the gain deficiency for the downstream processors. That is, when the signal power level is relatively weak and the total gain of the signal path is at a maximum gain level, the AGC loop 105 is configured to maintain the maximum gain level. In other words,

Webster et al. does not disclose re-computing the signal average power, and if the signal average power does not fall within the tracking range, starting tuning the gain from the default gain until the signal average power falls within the tracking range".

Webster et al. in column 14, lines 26-31 discloses that, when the target back-off power level is achieved or otherwise when the gaining setting of the baseband amplifier 125 is at its maximum gain setting while in state 407, the AGC/DC lock condition occurs and operation transitions to a signal track state 409 in which the "acquired" signal is tracked. Nevertheless, in this application, the gain tracking mode is entered for gain tracking when the signal average power falls within the tracking range.

Thus, Applicants submit that Webster et al. does not show the specific steps as presently described in claim 6. Webster et al. describes an automatic gain control method but does not follow the exact steps as listed in claim 6. Accordingly, Applicants submit that claim 6 as well as dependent claim 7-10 are also allowable.

The present invention provides a system which has an acquisition mode and a gain tracking mode. The system provides a method and apparatus for quick gain tuning by providing a system and method for determining when the different mode should be entered. Applicants submit that Webster et al. fails to teach these specific apparatus and steps as presently claimed in claims 1 and 6. Accordingly, Applicants submit that these claims are allowable.

Likewise, claims 2-5 and 7-10 depend from these allowable independent claims and as such are also considered to be allowable. The dependent apparatus claims further describe the operation of the logic unit under different conditions to control the other units. The dependent method claims similarly describe an increase or decrease of the gain by a default step when specific thresholds are reached. Accordingly, these claims are considered to be additionally allowable.

Conclusion

In view of the above remarks, it is believed to that the claims clearly distinguish over the patent relied on by the Examiner. In view of this, reconsideration of the rejection and allowance of all the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse Reg. No. 27,295 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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